



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/593,767

01/03/2007

Tomasz Troczynski

P06124

9097

30143

7590

04/08/2009

TODD N. HATHAWAY

119 N. COMMERCIAL ST. #620

BELLINGHAM, WA 98225

EXAMINER

BHAT, NINA NMN

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

04/08/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/593,767	Applicant(s) TROCZYNSKI, TOMASZ	
	Examiner N. Bhat	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The abstract of the disclosure is objected to because the abstract supplied is the abstract used in the corresponding WIPO application and the abstract as presently drafted and submitted includes extraneous information. Applicant is to draft a new abstract in a single paragraph directed to the claimed invention without using any legal phraseology on a single page which follows the claims. Correction is required. See MPEP § 608.01(b).

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1,2, 4-16 and 18-20 rejected under 35 U.S.C. 102(b) as being anticipated by Long et al., US Patent 5,593,640.

Long et al. teach a hydrogen generator and method of using the hydrogen generator which utilizes a hydrolysis reaction which provide controllable generation of hydrogen. The hydrogen generator (10) as shown in Figure 1, includes a container (12) which contains a metal hydride which include lithium aluminum hydride or aluminum hydride which reads on applicants "aluminum composite" which under go hydrolysis and chemical decomposition thereby generating hydrogen. A heating unit (16) is adjacent the chemically hydride container. A water supply (18) supplies water into a water conduit (19) which is coupled to container (12) containing the hydride. The temperature of reaction and hydrolysis/decomposition reaction is controlled by employing the heating unit. A buffer (20) is coupled to container (12) via conduit (21) for recovering hydrogen generated inside container (12)during hydrolysis of metal hydride. Buffer (20) includes an outlet (20a) for supplying an output flow of hydrogen for used by a device such as a fuel cell or hydrogen burner or storage burner etc. Buffer (20) further serves to supply and initial flow of hydrogen to outlet (20a) during the start-up of the hydrogen generator and will absorb excess hydrogen generated after the hydrogen generator is stopped. The buffer

Art Unit: 1797

(20) includes a hydrogen buffer material such as metal hydride which provides the initial flow of hydrogen during start up, and is absorbs excess hydrogen during shut down by reducing the hydrogen pressure in container (12). A control unit (22) is provided for controlling an amount of hydrogen generated by hydrogen generator (10) and includes a pressure switch coupled to the buffer unit (20) via conduit (23) The control unit (22) senses hydrogen pressure as well as controlling the water supply (18) to control the flow of water from the water supply to the container (12) thereby controlling the hydrolysis reaction. The control unit can include a controller for receiving multiple pressure inputs and temperature inputs to control the flow of supply water supplied to the container. [Note Column 3, line 64-66, Column 4, lines 11-68 to Column 5, lines 10-26] . In Figures 3 and 4, the buffer (44) system includes both a buffer vessel (44a) and (44b) which would anticipate a plurality of buffer vessels that received hydrogen from one reactor vessel which is capable of controlling the pressure to a fuel cell and include switching or valving or means for controlling the amount of hydrogen to a fuel cell from a hydrogen generating device. The buffer vessels includes a metal hydride for absorbing and releasing hydrogen as claimed by applicant.[Note Column 10, lines 60-67] It is maintained that the Long et al. portable hydrogen generator fully anticipate applicant's claims as presently drafted.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1797

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 3 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Long et al., US Patent 5,593,640 in combination with Andersen et al., US Patent 6,638,493.

Long et al. teach the invention substantially as claimed for reasons delineated above however, Long et al. do not teach applicant's specific amalgam of metallic aluminum and calcined alumina.

Anderson et al. teach a method of producing hydrogen. Anderson et al. '493 teach reacting aluminum with water in the presence of sodium hydroxide as a catalyst. The hydrogen generator includes a reaction vessel and includes a water bottle affixed to the side of the reaction vessel and piping system which is in fluid connection with the reaction vessel. Aluminum particles are delivered into the reaction vessel from a hopper and then exposed to an alkaline solution within the reaction vessel. The aluminum particles are dispensed into the reaction vessel, and reaction takes place when the aluminum particles contact the alkaline solution thereby forming hydrogen, the aluminum then precipitates as alumina. The alumina which is collected is inert to the reaction for producing hydrogen. The hydrogen generating reaction takes place when and alkaline aqueous sodium hydroxide solution contacts the surface of the aluminum. The hydrogen generating reactions are shown in Column 6, lines 1-25. Anderson et al. teach that from reading the prior art, how one would select the using aluminum or other metals with an alkaline solution can be used in generating hydrogen. It would have

Art Unit: 1797

been obvious to one having ordinary skill in the art at the time the invention was made to replace the aluminum hydride or metal composite taught in Long et al. and replace it with metallic aluminum and alumina composite from the combined teachings of Long et al. and Anderson et al. because both references teach hydrogen generators which a hydrolytic reaction for generating hydrogen. Anderson et al. do not specifically use a metallic amalgam but does teach generating hydrogen by using aluminum and aqueous sodium hydroxide wherein the reaction or hydrogen production takes place with the solution contacting the surface of the aluminum, the reaction produces hydrogen alumina as a precipitate which can be collected. The alumina as described by Anderson is inert to the hydrolytic reaction and therefore to provide aluminum on a calcined alumina support or amalgam would have been obvious from the teachings of Anderson et al. Further to replace the amalgam or aluminum composite for the metallic composites or metal hydrides taught for hydrolytic reaction in producing hydrogen in the apparatus of Long et al. renders applicant's invention as a whole obvious to one having ordinary skill in the art at the time the invention was made.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Long et al. teach a portable hydrogen generating method. Redmond teaches a method and apparatus for hydrogen generating. Checketts teach a hydrogen generation system which includes a pelletized metal composite or specifically an aluminum coated sodium pellet which is subjected to a hydrolytic reaction.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to N. Bhat whose telephone number is 571-272-1397. The examiner can normally be reached on Monday-Friday, 9:30AM-6:00PM.

Art Unit: 1797

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/N. Bhat/
Primary Examiner, Art Unit 1797